

**RECEIVED
CENTRAL FAX CENTER****JUL 28 2006**

Attorney Docket Number: FSP0306
Application Number: 10/029,810

-2-

Claims

1. (Original) A data communication system (100) comprising:
a headend (105) for generating a transmission signal;
a plurality of distribution hubs (110) operationally coupled to said headend (105);
a plurality of fiber nodes (115), each of said fiber nodes (115) being operationally coupled to said distribution hub by a transmission cable (132) and a return cable (135), said transmission cable (132) coupled to each fiber node (115) providing said transmission signal to said fiber node (115);
a plurality of service lines (120) extending from each of said fiber nodes (115) to operationally couple a plurality of subscriber sites (125) to each of said fiber nodes (115), and to provide said transmission signal received from said headend (105) at each of said fiber nodes (115) to said subscriber sites (125); and
a plurality of cable modem termination packages (300) operationally coupled to one of said plurality of distribution hubs (110), one of said plurality of fiber nodes (115), or one of said plurality of service lines (120), said cable modem termination packages (300) located downstream from said headend (105).
2. (Original) The system (100) of claim 1, wherein said transmission signal includes a cable television (CATV) signal.
3. (Original) The system (100) of claim 1, wherein said cable modem termination packages (300) are located at said distribution hubs (110).
4. (Original) The system (100) of claim 1, wherein said cable modem termination packages (300) are located at said fiber nodes (115).
5. (Original) The system (100) of claim 1, wherein said cable modem termination packages (300) are located at said subscriber sites (125).
6. (Original) The system (100) of claim 1, wherein said fiber nodes (115) further include:
an upstream connection operationally connected, by a plurality of first data carrying cables, to a

Attorney Docket Number: FSP0306
Application Number: 10/029,810

-3-

first distribution point; and
a downstream connection operationally connected by a plurality of second data carrying cables, to
a second distribution point.

7. (Original) The system (100) of claim 6, wherein said plurality of first data carrying cables are
fiber optic cables.

8. (Original) The system (100) of claim 6, wherein said plurality of second data carrying cables are
fiber optic cables.

9. (Original) The system (100) of claim 6, wherein said plurality of second data carrying cables are
co-axial cables.

10. (Original) The system (100) of claim 6, wherein said first distribution point is a distribution
hub.

11. (Original) The system (100) of claim 6, wherein said first distribution point is a fiber node
(115).

12. (Original) The system (100) of claim 6, wherein said second distribution point is a fiber node
(115).

13. (Original) The system (100) of claim 6, wherein said second distribution point is a subscriber
site (125).

14. (Original) The system (100) of claim 6, wherein said first distribution point is a distribution
hub (110).

15. (Original) A method of employing a data communication system (100), said method
comprising:

Attorney Docket Number: FSP0306
Application Number: 10/029,810

-4-

generating a transmission signal at a headend (105);
operationally coupling a plurality of distribution hubs (110) to said headend (105);
operationally coupling a plurality of fiber nodes (115) to said distribution hub (110) by a transmission cable (132) and a return cable (135), said transmission cable (132) coupled to each fiber node (115) providing said transmission signal to said fiber node (115);
providing a plurality of service lines (120) extending from each of said fiber nodes (115) to operationally couple a plurality of subscriber sites (125) to each of said fiber nodes (115), and providing said transmission signal received from said headend (105) at each of said fiber nodes (115) to said subscriber sites (125); and
operationally coupling a plurality of cable modem termination packages (300) to said data communications system (100), said cable modem termination packages (300) located downstream from said headend (105).

16. (Original) The method of claim 15, wherein said step of generating a transmission signal includes generating a cable television (CATV) signal.

17. (Original) The method of claim 15, wherein said step of coupling said cable modem termination packages (300) includes locating said cable modem termination packages (300) at said distribution hubs (110).

18. (Original) The method of claim 15, wherein said step of coupling said cable modem termination packages (300) includes locating said cable modem termination packages (300) at said fiber nodes (115).

19. (Original) The method of claim 15, wherein said step of coupling said cable modem termination packages (300) includes locating said cable modem termination packages (300) at said subscriber sites (125).

20. (Original) The method of claim 15, wherein said step of operationally coupling a plurality of fiber nodes (115) to said distribution hub (110) further includes:

Attorney Docket Number: FSP0306
Application Number: 10/029,810

-5-

operationally connecting an upstream connection of said fiber node (115), with a plurality of first data carrying cables, to a first distribution point; and
operationally connecting a downstream connection of said fiber node (115) with a plurality of second data carrying cables, to a second distribution point.

21. (Original) The method of claim 20, wherein said plurality of first data carrying cables are fiber optic cables.

22. (Original) The method of claim 20, wherein said plurality of second data carrying cables are fiber optic cables.

23. (Original) The method of claim 20, wherein said plurality of second data carrying cables are co-axial cables.

24. (Original) The method of claim 20, wherein said first distribution point is a distribution hub (110).

25. (Original) The method of claim 20, wherein said first distribution point is a fiber node (115).

26. (Original) The method of claim 20, wherein said second distribution point is a fiber node (115).

27. (Original) The method of claim 20, wherein said second distribution point is a subscriber site (125).

28. (Original) The method of claim 20, wherein said first distribution point is a distribution hub (110).

29. (Original) A cable modem termination package (300) comprising:
a demodulator circuit (301);
a multiplexor circuit (302);

Attorney Docket Number: FSP0306
Application Number: 10/029,810

-6-

a demultiplexor circuit (303);
at least one optical transmitter (304); and
at least one optical receiver (305).

30. (Original) The cable modem termination package (300) of claim 29, further comprising connection devices (306) for operationally connecting said cable termination package (300) to a data communication system (100).

31. (Original) The package (300) of claim 30, wherein said connection devices (306) include coaxial cable connection devices.

32. (Original) The package (300) of claim 30, wherein said connection devices (306) include fiber optic cable connection devices.

33. (Original) The package (300) of claim 29, wherein said multiplexor circuit (302) is a time division multiplexor circuit.

34. (Original) The package (300) of claim 29, wherein said multiplexor circuit (302) is a wavelength division multiplexor circuit.

35. (Original) The package (300) of claim 29, wherein said demultiplexor circuit (303) is a time division demultiplexor circuit.

36. (Original) The package (300) of claim 29, wherein said demultiplexor circuit (303) is a wavelength division demultiplexor circuit.